

Surgery to prevent stroke proving safe even among elderly

by Kenneth A. Goldman, M.D.

It's one of those unfortunate facts of growing old, but between the ages of 45 and 85, a person's chance of having a stroke doubles with each decade. That's a scary thought, considering that stroke is America's third leading killer. However, surgeons now have a way to combat this enemy of aging, with a procedure that can safely prevent stroke even in the elderly.

Carotid endarterectomy (pronounced end-art-ter-ec-toe-me) is a surgical procedure that removes fatty deposits, or plaque, from the carotid arteries to prevent stroke. About a third of strokes are caused by blockages in the carotid arteries, the blood vessels in the neck that supply blood to the brain.

By doing carotid endarterectomy, surgeons have been able to significantly cut the risk of stroke in patients with carotid artery disease. In a study funded by the National Institute of Neurological Disorders and Stroke, the surgery cut the risk of stroke by two thirds. In a two-and-a-half-year study done at The Medical Center at Princeton, the surgery was also found to be very safe for patients in their 80's. Twenty-five percent of the 310 endarterectomies done at The Medical Center during this study were on patients who were over age 80.

Stroke is the second leading cause of death among octogenarians. About \$15 billion to \$30 Billion per year is spent on acute care hospitalizations for stroke victims. Strokes can be temporary (called a transient ischemic attack, or TIA) or can inflict long lasting brain damage. The risk factors for strokes are the same for coronary heart disease - high blood pressure, high cholesterol, smoking, diabetes and/or a family history of atherosclerotic disease.

Anti-platelet drugs that reduce clotting have been helpful in combating stroke, but carotid endarterectomies are being performed more frequently because they have been found to be so effective. There is strong evidence that a carotid endarterectomy provides better protection against stroke than aspirin does in patients with severe (greater than 70%) obstruction of the carotid artery in patients both with and without symptoms.

With the recognition that the procedure can be done safely on patients over the age of 80, the procedure has become one of the most common vascular procedures in the United States. In 1992, 91,000 carotid endarterectomies were done in the United States, according to the most recent figures from the National Institute of Neurological Disorders and Stroke.

The first carotid endarterectomy was performed by Dr. Michael DeBakey in 1953 and became a standard of care in the late '60's and '70's. There used to be concern over doing the operation on people over the age of 80, but a combination of advances made it even safer for elderly patients. Anesthesia in general has gotten much safer, physicians now have a better idea of which patients should be screened for carotid artery disease, and the diagnostic technique for screening has become less invasive.

A carotid endarterectomy is done most safely before a patient develops symptoms of a stroke. Symptoms of a stroke or TIA can include weakness or numbness of an extremity or an entire side of the body, loss of vision in one eye, difficulty in speech or the ability to swallow, and/or confusion. These are severe symptoms that need immediate medical attention.

However, there is no guarantee someone with advanced carotid artery disease will have recognizable symptoms of a stroke, so screening is very important. If left untreated, carotid blockages (stenosis) can represent a life-threatening condition.

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Today, carotid artery disease is diagnosed with a carotid duplex, an ultrasound of the neck that is completely non invasive, inexpensive and highly accurate. That is the first test. It allows a physician to determine the degree of blockage in the carotid artery by measuring the speed of the blood. If the carotid duplex shows disease, then an MRA—a magnetic resonance angiogram—which actually shows the blood vessels, can be done to confirm those results. These diagnostic techniques replace an older test, an angiogram, which used to be done. Angiograms, which are more invasive and more expensive, require a catheter being placed into a blood vessel.

Nearly 80 percent of carotid endarterectomies performed at The Medical Center in Princeton are done under local anesthesia, with patients awake. If a person is very claustrophobic or can't lie still, then they can be given general anesthesia, which is safe as well. An incision along the front of the muscle in front of the neck to reach the carotid artery. With a dissecting tool, the surgeon can remove the plaque that is clogging the inside of the artery. Very often, the surgeon

The procedure takes about an hour and a half. The main risk of surgery is that a person can have a stroke, but that rate is small, between 1 and 2 percent. In general, most patients can be discharged from the hospital within two days and return to full activity in less than a week.

Carotid endarterectomy has been found to be about 98 to 99 percent effective, with recurrences of blockages in less than two or three percent. Some physicians have recommended an angioplasty of the carotid artery to treat carotid disease. During this procedure, a balloon is used to dilate the artery. However, the results show the rate of stroke is five to 10 times higher with an angioplasty than with a carotid endarterectomy.

No one likes the idea of undergoing surgery. But the evidence clearly shows that for most patients, the benefits of a carotid endarterectomy outweigh the risks—even for patients who are over age 80.